OPEN PEER REVIEW

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- Authors' satisfactions from the review process: Increases honesty between authors and reviewers
- Education of both authors and new students
- Prevents reviewers from following their individual agendas and leading to the detection of reviewers' conflicts of interests

You can find out more at:
https://sites.kowsarpub.com/kowsar/knowledgebase/category/tree.html#opr.html

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Peer Review Report for "Risk Assessment Using Early Quantitative Chest CT Parameters for the Severity of COVID-19"

Author(s): Xun Ding, Jia Xu, Haibo Xu, Jun Zhou , Qingyun Long

Review Timeline:

Submit Date: 22 Sep 2020
Revised Date: 7 Jun 2021
Accepted Date: 9 Jun 2021

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (0) — 3 Oct 2020

Dear AE,
Although the authors of the current project try to do high-quality research, unfortunately, the design of study is not appropriate for its purpose. Because, the design of the study is cross-sectional, but for evaluation factors effect on COVID 19 progression or severity, it must be run out preferably prospective cohort or historical cohort or case-control study.
Thanks.

REFEREE: Reviewer | **Revision** (0) — 11 Oct 2020

Dear AE,
The authors have presented a well-structured study with an acceptable number of cases and regarding that, it can be accepted for publication in IJR.
Thanks.

REFEREE: Reviewer | **Revision** (0) — 28 Oct 2020

Dear AE,
The article needs revision.

1) the authors should change the article format as a case control study and accordingly make proper revisions in the article.
2) please define the two groups in the abstract.
Best Regards

REFEREE: Associate Editor | **Revision** (0) 31 Oct 2020

Dear EIC,
The manuscript needs major revision.
Thanks.

REFEREE: EIC | **Revision** (0) 31 Oct 2020

Dear authors,
Your article needs Major Revision.
Regards

OPEN PEER REVIEW

Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Response to Reviewers

Dear editor and reviewers:

Thank you very much for your letter and the reviewers' comments on our manuscript entitled "Risk assessment value of early chest quantitative CT parameters for the severity of COVID-19" (revised title). Those comments are very helpful for revising and improving our paper, as well as the important guiding significance to other research. We have studied the comments carefully and made corrections which we hope meet with approval. The main corrections are in the manuscript and the responds to the reviewers' comments are as follows (the replies are highlighted in blue).

Replies to the editor' and reviewers' comments:

COMMENTS TO AUTHOR:

Reviewer 1:
Hi
Although, the authors of current project try to do a high quality research, unfortunately the design of study is not appropriate for its purpose. Because, the design of study is cross-sectional, but for evaluation factors effect on COVID 19 progression or severity, it must be run out preferably prospective cohort or historical cohort or case-control study.

Response： Thanks very much for your review. Our study design is based on a retrospective case-control. We are very sorry for our poor expression, which makes it look like a cross-sectional design. We have made some revisions including the title, the purpose, and the article format in the manuscript. We hope these revisions can make you understand the article more clearly and meet your requirements, thanks.

Reviewer 2:
The authors have presented a well structured study with the acceptable number of cases and regarding that it can be accepted for publication in IJR.

Response： Thanks very much for your recognition of our article.

Reviewer 3:
Dear associate editor,

The article needs revision.
1) the authors should change the article format as case control study and accordingly make proper revisions in the article.
2) please define the two groups in the abstract.

Response :

1) Thanks very much for your review. Our study design is based on a retrospective case-control. We are very sorry for our poor expression, which makes it look like a cross-sectional design. We have made some revisions including the title, the purpose, and the article format in the manuscript. We hope these revisions can make you understand the article more clearly and meet your requirements, thanks.

2) Thanks very much for your suggestion, we have added the definition of the two groups in the abstract.

OPEN PEER REVIEW

Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (1) 18 Nov 2020

Dear AE,
The revised could be accepted for publication.
Best Regards

REFEREE: Reviewer | **Revision** (1) 21 Nov 2020

Dear AE,
At present, it can be said that the manuscript is relatively appropriate in terms of methodology, but the following corrections need to be made:
1. Remove the word retrospective from the term of case-control study.
2. In Table 2:
2.1. Remove the p-value columns.
2.2 Only report the adjusted odds ratio of one model (more complete and simpler), for which you need to compare the coefficient of determination (R2) of the models and reported in below of table.
Thanks.

REFEREE: Associate Editor | **Revision** (1) 30 Nov 2020

Dear EIC,
Thanks for the answers to the questions and appropriate changes. The study is interesting and we ask the authors to do some more changes based on reviewers' comments to improve the quality of article.
Thanks.,

REFEREE: EIC | **Revision** (1) 30 Nov 2020

Dear authors,
Your article needs Minor Revision.
Regards

OPEN PEER REVIEW

Revision (2)

Reply to Reviewers

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You can read the authors' responses to the reviewers' comments in the next page.

Response to Reviewers

Dear editor and reviewers:

Thank you very much for your letter and the reviewers' comments on our manuscript entitled "Risk assessment value of early chest quantitative CT parameters for the severity of COVID-19". Those comments are very helpful for revising and improving our paper, as well as the important guiding significance to other research. We have studied the comments carefully and made corrections which we hope meet with approval. The main corrections highlighted in red are in the manuscript and the responds to the reviewers' comments are as follows (the replies are highlighted in blue).

Replies to the editor' and reviewers' comments:

COMMENTS TO AUTHOR:

Reviewer 1:
Dear associate editor,
The revised could be accepted for the publication.
Best Regards

Response : Thanks very much for your recognition of our article.

Reviewer 2:
Hi
At present, it can be said that the manuscript is relatively appropriate in terms of methodology, but the following corrections need to be made:
1. Remove the word retrospective from the term of case-control study.
2. In Table 2:
2.1. Remove the p-value columns.
2.2 Only report the adjusted odds ratio of one model (more complete and simpler), for which you need to compare the coefficient of determination (R2) of the models and reported in below of table.

Response :

1. Thanks very much for your suggestion, we have removed the word retrospective from the term of case-control study.

2.1. Thanks very much for your suggestion, we have removed the p-value columns in Table 2.

2.2. Thanks very much for your suggestion, we have removed the adjusted odds ratio of one model. Since we used binary logistic regression analysis instead of linear regression, we used Hosmer-Lemeshow (H-L) test instead of R2 when testing the goodness of fit of the regression model and have reported H-L test results in below of Table 2.

OPEN PEER REVIEW

Revision (2)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (2) — 5 Dec 2020

Dear AE,
At present, it must be said that this manuscript is appropriate according to the methodology point of view.
Thanks.

REFEREE: Associate Editor | **Revision** (2) — 6 Dec 2020

Dear EIC,
The manuscript could be accepted after appropriate changes.
Thanks.

REFEREE: Reviewer | **Revision** (2) — 17 May 2021

Dear AE,
The study is reviewed carefully. According to comments and revisions by the author, this manuscript is accepted.
Thanks

REFEREE: Associate Editor | **Revision** (2) — 1 Jun 2021

Dear EIC
The reviewer(s) have recommended publication, but also suggest some minor revisions to the manuscript. Therefore, I invite the author to respond to the reviewer(s)' comments and revise his manuscript.
Kind regards,

REFEREE: EIC | **Revision** (2) — 2 Jun 2021

Dear authors,
Your article needs Minor Revision.
Regards

OPEN PEER REVIEW

Revision (3)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Response to Reviewers

Dear editor and reviewers:

Thank you very much for your letter and the reviewers' comments on our manuscript entitled "Risk assessment of early chest quantitative CT parameters for the severity of COVID-19". Those comments are very helpful for revising and improving our paper, as well as the important guiding significance to other research. We have studied the comments carefully and made corrections which we hope meet with approval. The main corrections highlighted in red are in the manuscript and the responds to the reviewers' and editor' comments are as follows (the replies are highlighted in blue).

Replies to the editor' and reviewers' comments:

COMMENTS TO AUTHOR:

Reviewers' Comments:
Reviewer 1:
At present, it must be said that this manuscript is appropriate according to the methodology point of view.
Response： Thanks very much for your recognition of our article.

Reviewer 2:
This paper is ok.
Response： Thanks very much for your recognition of our article.

Associate Editor's Comments:
Associate Editor 1:
Dear EIC,
The manuscript could be accepted after appropriate changes.
Response： Thanks very much for your recognition of our article, we have made some appropriate changes.

Associate Editor 2:

1-it seems the word value in title should be deleted
Thanks very much for your suggestion, we have deleted the word value in title.

2-please add a brief background for abstract according to journal format.
Thanks very much for your suggestion, we have added a brief background for abstract.

3-please correct the object6ive of abstract as: “This study aims to assess the risk of progression to critical illness in COVID-19 patients based on early chest quantitative computed tomography (CT) parameters.”
Thanks very much for your suggestion, we have corrected the objcetive of abstract.

4-please correct: “39 cases (critical group) with laboratory-confirmed COVID-19 patients which included critical and dead patients and 117 controls (non-critical group) with laboratory-confirmed COVID-19 patients which included general and severe patients were enrolled.” To: “39 laboratory-confirmed critical or dead cases of COVID-19 patients (critical group) and other 117 laboratory-confirmed COVID-19 patients which included mild, moderate or severe forms (non-critical group) were enrolled.” [general patient is meaningless]
Thanks very much, we have made the corresponding modification according to your suggestion.

5-please correct: “critical or non-critical” to: “critical vs. non-critical”
Thanks very much for your suggestion, we have corrected it.

6-this sentence is unclear: “Seven quantitative CT parameters representing the volume percentages of lungs with different density intervals were automatically calculated using artificial intelligence (AI) algorithms.”
Thanks very much for your question, it means the artificial intelligence (AI) algorithms automatically calculated seven quantitative parameters (HU-1~HU-7) which respectively represent the volume percentages of lungs with different densities intervals of -1000~-700 hounsfield unit (HU) (HU-1), -700~-600 HU (HU-2), -600~-500 HU (HU-3), -500~-300 HU (HU-4), -300~-200 HU (HU-5), -200~60 HU (HU-6) and 60~1000 HU (HU-7), and it can be found in body of paper (3.4).

7-please add full term of abbreviations for the first time in abstract and body of paper separately [OR, ….]
Thanks very much for your suggestion, we have added full term of abbreviations for the first time in abstract and body of paper separately.

8-line 23, “and its cuttoff” should be “and cutoff”
Thanks very much for your suggestion, we have corrected it.

9-line 26: “which have significance for clinical management” significance is better to be importance.
Thanks very much for your suggestion, we have corrected it.

10-please add objective part to main body of paper. in addition, please add numbers to titles and subtitles: 1- Background, 2-objectives, 3-patients and methods, 3.1- Study design and participants, ……
Thanks very much for your suggestion, we have added objective part to main body of paper and numbers to titles and subtitles.

11-the part: “who received CT examinations on admission” is better as: “who underwent CT examinations on admission”
Thanks very much for your suggestion, we have corrected it.

12-line 77; “included general and” could be “mild, moderate and” [general patient is meaningless]
Thanks very much for your suggestion, we have corrected it.

13-what is the meaning of units in line 90? [Two units were used]
I am so sorry for our unclear expression, the meaning of units are CT scanners,and we have corrected it.

14-in line 98, “analyze the pulmonary invasion” should be “analyze the pulmonary involvement”
Thanks very much for your suggestion, we have corrected it.

15-I think SPSS ver 23 is for IBM Inc. not SPSS Inc. please check and revise the manufacturer data of SPSS>
I am so sorry for our careless, we have corrected it.

16-if the data were normally distributed, did the authors compared the groups by Mannwhitney or bu independent t-test?
Thanks very much for your question, if the data were normally distributed, we would compared the groups by independent t-test, but our data were non-normally distributed, and the Mann-Whitney U test were used to compare the differences between the groups.

17-please correct proealcitonin to procalcitonin. [in text and table 1 and 2]
I am so sorry for our careless, we have corrected them.

18-in line 119, the authors mentioned: “were established to predict adverse outcomes of COVID-19 (critical or non-critical).” It should be: “were established to predict critical patients of COVID-19 (critical vs. non-critical)”
Thanks very much for your suggestion, we have corrected it.

19-line 122, is should be was. [P value is less than 0.05]

Thanks very much for your suggestion, we have corrected it.

20- P = 0.000 should be written as: P < 0.0001.
Thanks very much for your suggestion, we have corrected it.

21-in table 1, Inital should be initial
I am so sorry for our careless, we have corrected it.

22-please correct Cuttoff to cutoff in all paper.
I am so sorry for our careless, we have corrected them.

23-in figure 1 legend, transversal is better to be written as axial.
Thanks very much for your suggestion, we have corrected it.

OPEN PEER REVIEW

Revision (3)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Associate Editor | **Revision** (3) 8 Jun 2021

Dear EIC
Based on the authors' answers to the reviewers' comments, the reviewer(s) have recommended publication.
Kind regards.

REFEREE: EIC | **Revision** (3) 9 Jun 2021

Dear authors,
Your article is acceptable for the publication in IJR.
Regards